IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Wainwright et al.

Examiner: Drew E. Becker

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For: AMYLOPECTIN POTATO FLAKES OR GRANULES AND THEIR USE IN SNACK FOODS

Dated: August 14, 2006

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

*I hereby certify this correspondence is being deposited with the United States Postal Service as first class mail, postpaid in an envelope, addressed to: Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450 On August 14, 2006*_____

*Signature:*_____

DECLARATION UNDER 37 CFR 1.132

I, Pieter L. Buwalda, state the following:

1. I am a Food Starch Specialist at the Food Competence Center of the international co-operative AVEBE in Foxhol, The Netherlands, the world's largest manufacturers of potato starch derivatives. I took up this position on December 1 of 2001.

2. Before that I was associated with the Chemistry Department of AVEBE for a period of almost twelve years where I performed research on various starch applications, the last five years mainly food oriented. My specialisation is Chemistry of Starch.

3. I hold a PhD degree in Organic Chemistry from the University of Groningen, the Netherlands, and have written a number of publications and am a co-inventor of various patents relating to Starch Chemistry. In 1997, for instance, I acted as an author on Granular and Molecular Structure of Starch, The 3rd CAFST International Symposium, page 109.

4. A list of my publications was attached to the declaration filed on November 18, 2005.

5. One of the discoveries of the above-identified invention is that snack foods made of potato flakes and/or granules with high amylopectin starch content have unexpectedly increased expansion *vis-à-vis* snack foods made of natural potato starch. The examples of the present application clearly demonstrate such increased expansion.

6. The Examiner confuses the potato flakes and the dough made from the potato flakes, as disclosed by Martines-Serna Villagran *et al.* (U.S. Patent No. 6,544,580, hereinafter "Villagran *et al.*"). It is true that the reference discloses using a starch-based material which can be selected from different sources, including waxy corn starch (see col. 3, l. 51-65), but this starch-based material is not part of the potato flakes, but added to the potato flakes to produce a dough (see col. 10, l. 27-34). In contrast, the present invention requires that the potato flakes or granules themselves comprise starch having an amylopectin content of at least 95%.

7. The passage of column 5, lines 15-19 of Villagran *et al.* relates to a process which is well-known in the art of starch chemistry, viz. that of amylose leaching. This process is used to enrich a starch based product in amylopectin in the process of gelatinization by removing part of the amylose. To this end, the potato flakes are cooked. In amylose containing starches at the gelatinization temperature the amylose leaches out first and then the melting (gelatinization) of the enriched amylopectin fraction takes place. If the flakes are overcooked, too much of the amylose is leached and washed out. This has the result that the cell walls in the potato flakes become too weak. If the flakes are undercooked, the starch is not gelatinized to a sufficient extent and no or insufficient amylose is removed. The process is described such that the "right cook" is achieved. In the right cook, the starch is gelatinized, but not overcooked as to result in separate amylopectin molecules having a long texture. This phenomenon is monitored by

Villagran *et al.* indirectly, viz. by measuring amylose content. Accordingly, it is clear that the passage does teach away from achieving a too high amylopectin content.

8. When flakes from potatoes which do not contain any amylose, the process of amylose leaching described by Villagran *et al.* is not applicable. First of all, the gelatinization occurs differently in case there is no amylose, and secondly, there is no amylose so there is no need to remove it. Accordingly, it is apparent that Villagran *et al.* only teach potato flakes with normal amylopectin content.

9. It is common knowledge in the art that potato flakes contain about 20 wt.% non-starch components, such as proteins, fibers, non-reducing sugars and amino acids. Villagran *et al.* state "The resulting dehydrated potato flakes comprise from about 19% to about 27% amylose, from about 5% to about 10% moisture, at least about 0.1% emulsifier and a water absorption index of from about 7.7 to about 9.5." (See col. 6, lines 49-52.) For the "preconditioned" potato pieces, Villagran *et al.* state that the dehydrated potato flakes resulting from the pre-conditioned process comprise from about 16% to about 20% amylose, from about 5% to about 10% moisture, at least 0.1% emulsifier, and a water absorption index of from about 6.7 to about 8.3. (See col. 7, lines 30-34.) Since potato flakes contain about 20 wt.% non-starch components, the amylopectin content in the flakes is be considerably less than 84 wt.%.

10. Neither Tallberg (see col. 7, lines 25-40), nor Stahl (see col. 1, l. 63 through col. 2, l. 9), nor Jeffcoat teaches the use of potato flakes or granules to produce a food product. At best, they teach that a starch isolated from potatoes can be used for producing a food product.

11. I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true. Further that these statements were made with the knowledge that willfully false statements, and the like, so made

are punishable by fine or imprisonment or both under Section 1001 of Title 18 of the United States Code, and that such willfully false statements may jeopardize the validity of the application of any patent issued thereon.

Pieter L. Buwalda

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